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ABSTRACT

This fact sheet gives an overview of computer-based career information and guidance systems to aid in understanding, selecting, and using such systems. Topics covered include: (1) possible components of a computer-based system; (2) user needs which can be met through such a system; (3) areas to be considered when selecting a system including resources, information and guidance, population and setting, structure, data storage, use of data, changing and updating information, and costs; (4) issues to address to ensure the effectiveness of the system including evaluation, access for all learners, personnel preparation, and affirmative action; and (5) areas in which staff development may be needed. A bibliography citing four references and 14 additional resources, most of which are available from the Educational Resources Information Center (ERIC) system, is provided. (DC)

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Computer-Based Systems.

OVERVIEW: ERIC Fact Sheet No. 5.

by

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ERIC OVERVIEW

FACT SHEET No. 5
Clearinghouse on Adult, Career, and Vocational Education

COMPUTER-BASED SYSTEMS

This Fact Sheet gives an OVERVIEW of Computer-Based Career Information Systems. It is designed to help increase your understanding of computerized systems, including what they are, how they can help students/clients, and how to select and use a system. In addition to this basic information, resources from the Educational Resources Information Center (ERIC) have been listed. These resources provide more complete information that can help you understand, select, and use computer-based career information systems.

WHAT ARE COMPUTER-BASED SYSTEMS?

Computer-based career information and guidance systems employ automated resources to deliver some or all of a set of experiences to the student or client. Such systems may provide information about educational opportunities and occupations, or they may store personal data about the student or client and disseminate this information to help the student in decision making. In addition to providing comprehensive, up-to-date information about career options, they also relate to each student's individual needs. Although computerized systems may be seen as performing many of the duties typically performed by counselors and teachers, they are intended to supplement and enhance the counseling function rather than replace it.

The use of computers for record-keeping and data processing in guidance has existed for quite some time. But it was not until the 1960s that computers came to be used widely for directly carrying out guidance responsibilities. Possible components of a computer-based career information system are as follows:

- Appraisal of the user through testing and assessment
- Information about career, educational, occupational, and other life options
- Assessment of options for greater decision-making ability
- Planning for ways in which to implement the informed decisions that have been made

WHAT USER'S NEEDS CAN BE MET THROUGH THESE SYSTEMS?

The computer-based career information system provides the user with occupational, educational, and other information so as to broaden the user's awareness of career choices. It also combines personal data about the user and relates these data to the information being explored by the user. A record of the user's paths of exploration or decision making is kept, and discrepancies are pointed out between the user's characteristics and what is being explored. Mediation is then provided in a variety of ways. These systems provide complex career-planning assistance, supporting users' need to do the following:

- Have accurate and up-to-date information about a variety of educational, occupational, or other career or life options
- Explore a variety of career options before making a decision
- Develop a greater understanding of personal interests, skills, and abilities, and examine them in terms of career options
- Develop a greater understanding about educational, occupational, and other career requirements
- Seek out and secure information to help make informed choices and decisions
- Match personal data with educational, occupational, and other requirements so that the user is better fitted to the occupational, educational, and/or career option chosen
- Develop decision-making skills by having search large data files and identified options

GUIDELINES FOR SELECTING A COMPUTER-BASED CAREER INFORMATION SYSTEM

To be effective, several policy areas should be addressed when establishing a computer-based career information system:

- *Resources* Computer activities are designed to assist and enhance various guidance functions. This presupposes the availability of other guidance resources for use by the student or client.
- *Information and Guidance* The computer-based career information system is primarily an information system (although it may provide supplemental activities) that is used as a guidance tool. It is important that care be exercised in deciding which occupational or educational information will be used; and the method used in selecting this information must be reliable. Sufficient information should be given on working conditions, duties, equipment, earnings, training and educa-

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tion, method of entry, duration of training period or study, etc. Information should not reflect bias toward particular occupations, education, or other factors.

- *Population and Setting* The specific user of the system must be matched with its intended purpose. Some systems are designed for high school students, employment services, public libraries, and similar institutions. Others can be modified for broader use and settings. The system must relate to the total guidance program: counselors, teachers, students, parents, and the larger community. The information must be written at a level that can be understood by the user and should not show bias toward particular occupations or education. The system may be such that users can operate it without constant monitoring from the counselor.

- *Structure* Since users often do not have the information they need, may not know just what information it is they need or want, and sometimes cannot use the information they already have, it is important that the system be designed to assist users in understanding which areas about themselves or the world of work they should know more about; it should help them locate information that is relevant for these purposes; and it should help them understand and integrate this information so that they will be able to make informed decisions and choices.

- *Data Storage* The purpose of the system must determine what information or data will be collected. Decisions must be made about personality data to be collected, as well as occupational or educational information. The information must be accurate and up-to-date, and responsibility for these activities must be clearly defined and delegated. Primary sources of data should be checked and, if necessary, some evaluation made of how data were prepared. General information about occupations should be given, and information needed about educational programs should be available.

- *Use of Data* Guidelines must be prepared for the user to know how results may be generalized and what limitations exist for use of the data. Codes used to guide the user in search of information must be clear and easy to follow.

- *Changing and Updating Information* Some systems are designed so that individual institutions and agencies can supply data to the system. Such procedures help institutions and agencies ensure that information available is current and accurate. It is important that the information stored is accurate and consistent with other information provided in other documents from the agency or institution. Systems are designed for updating on varying schedules. Most make an annual update of all occupations, although some updates may be made more frequently. Costs for altering or replacing tapes or disks must be considered, which sometimes means less frequent updating. Because all information is not updated simultaneously, some information will not be as current as others. In order for various positions, wages, skills, education needed, and other requirements to be comparable with other data, information should be given to identify the year(s) to which retrieved data apply. When precise information is unavailable, it is recommended that projections be made so that the user will not have to make projections based on inaccurate or lack of information.

- *Costs* Costs often vary widely, due in part to the various components that may be needed by a particular system, such as license, tapes and/or disks, service materials, hardware, communication costs, connect time, computer use time, processors, terminals, manuals and handbooks, training workshops, consulting, maintenance, and updating. The costs of hardware and communications will perhaps be the most expensive items. Where some hardware already exists, it is advisable for institutions or agencies to investigate the feasibility of connecting the computerized system into existing facilities. Where multiple purpose uses are possible, costs could be reduced significantly. Costs per student and cost per terminal hour are but two of the ways in which costs may be determined to help make some limited cost comparisons.

Although the expenses may appear excessive, when compared to the time used by the counselor in performing similar duties and functions, the costs of a computer-based career information system are quite reasonable, especially when use of the system frees counselors to perform higher level guidance functions and enables them to provide more comprehensive and individualized services. Sources of funding for operating costs should be determined, the financial status of the system should be monitored closely, and audits should be performed as appropriate.

GUIDELINES FOR USING A COMPUTER-BASED INFORMATION SYSTEM

When the decision has been made to select a computer-based career information system, some additional policy issues must be addressed to help ensure greater effectiveness and efficiency in using it.

- *Evaluation* The implementation of a computer-based career information system should include an ongoing program of assessment to determine if users are achieving objectives set. The evaluation should also suggest ways in which the system can be improved or revised. It should be determined who uses the system and how often. Both counselors and users should be involved in the evaluation, and it may even be advisable to have a third-party individual assist with the evaluation.

- *Access for All Learners* Computer-based information systems should be available for all learners within the guidance program. The program should be based on the identified needs of individuals and should be available when access to the information will best benefit the user. Users should have access to the system during regular attendance or business hours, and information should be available to all users within a reasonable period of time. Manuals, booklets, and operating instructions should be readily available to system users and should be clear, unambiguous, and in sufficient quantity.

- *Personnel Preparation* Computer-based career information systems require trained program staff who can assist users with the system. They should understand the goals of the system, its role in complementing their work, and their roles in informing other staff about its use and capability.

- *Affirmative Action* Learners should be encouraged to explore nontraditional career areas. Guidance staff must encourage minority users to participate and to assist guidance staff in understanding the needs of these students. Information stored must be evaluated to ensure the nondiscriminatory nature of the information provided. The information should avoid racial, sexual, and other references to an individual's status—both in titles used for occupations and contents of the description of the job or educational program.

WHAT COMPETENCIES DO PROGRAM STAFF NEED?

Counselors, teachers, career education coordinators, and media specialists usually coordinate the computer-based career information system. However, the skills needed in performing this task usually go beyond traditional training and roles. Additional preparation may be needed in the following competency areas:

- Planning, organizing, and developing goals and objectives for a computerized career information and guidance system
- Learning about and developing skills to help evaluate computer-based guidance systems that are presently available
- Giving feedback and direction to those who develop systems to assist them in changing and improving the current systems
- Designing comprehensive guidance programs that incorporate computerized guidance systems and other guidance resources to provide systematic guidance activities for users
- Monitoring the use of computerized guidance systems and helping to train all staff in their effective use
- Keeping informed about new developments in computer-based guidance systems, including new systems, research findings, and new technology
- Modifying the counseling role to respond to more sophisticated computer-based guidance systems
- Integrating the system-counseling role with counseling and institutions or user agencies

WHERE CAN YOU FIND FURTHER INFORMATION?

This Fact Sheet has provided an overview of computer-based career information systems. If you want more comprehensive information to help you select and use a computer-based career information system, or to assist you in improving your present system, the resources listed in the bibliography will be helpful to you. Those contained in the Education Resources Information Center (ERIC) collection may be found by using the ED number indicated in the resource listing. Further, you can always find additional and related information in documents contained in the ERIC system under the following descriptors and identifiers. (The ones most directly related to the subject of this overview are designated by asterisks.)

Career Awareness	*Computer Oriented Programs
*Career Counseling	Computers
Career Development	*Data Bases
Career Exploration	*Occupational Information
*Career Guidance	*Online Systems
*Career Planning	

If you need further help in finding these materials, contact the User Services Coordinator, ERIC Clearinghouse on Adult, Career, and Vocational Education, The National Center for Research in Vocational Education, The Ohio State University, 1960 Kenny Road, Columbus, Ohio 43210 (Phone 800-848-4815 or 614-486-3655).

Materials published by the National Center for Research in Vocational Education may be purchased from National Center Publications (same address and phone numbers as for the Clearinghouse).

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